

REMARKS

Claims 1-5 are of record with claim 5 being withdrawn as directed to a non-elected invention.

Claims 1-4 stand rejected as unpatentable over the combination of Ziegler, WO 98/47186 in view of Tanaka, et al., EP0 0649151. The subject matter of all of claims 2-4 have been consolidated into claim 1, with minor editorial revisions, and claims 2-4 have been canceled.

An object of the present invention is to provide a mechanical persistent current switch that avoids damage to its bulk body caused by internal stress generated due to a difference in the thermal expansion coefficients between the bulk superconductor and the resin during thermal cycles (page 10, line 18 - page 11, line 5 in the Specification).

The present invention according to amended claim 1 now has the features of "the impregnated resin including fillers having a low thermal expansion coefficient in a dispersed manner", the "contacting surfaces of the thermals of the connector material are polished" and "a direction of current is parallel to the ab surface by making a contact surface of the connector material perpendicular to the ab surface of the connector material".

The foregoing combination produces a switch having characteristics such that "the persistent current switch can retain high critical current density and obtain a sufficient current carrying capacity even when the persistent current switch is installed in a space where it experiences large magnetic fields" (page 15, lines 15-17 of the Specification).

Ziegler is relied on for the basic teaching of a superconductor block type switch. But Ziegler's switch (25) is formed of superconductive wires (32) that are placed in a resin body. Tanaka is added for its teaching of a bulk superconductor of RE-Ba-Cu-O formed by a melt process. The Examiner takes the position that it would have been obvious to fabricate the Ziegler switch with the material of Tanaka. No support is provided for this. In fact, as noted above, there is no teaching or suggestion in Ziegler of using a bulk superconductor.

The combination does not meet the claimed feature of the resin having dispersed fillers that provide a low thermal expansion and the Examiner does not address this. The Examiner also

takes the position that it would be obvious to provide the claimed features of the polished terminal contact surfaces, but provides no support for this.

Further, the Examiner does not at all address the claimed feature of establishing the direction of current flow by making the contact surface of the connector material perpendicular to the ab surface of the connector. As explained above, all of these features in combination produce a switch having the advantageous feature of being able to retain a high critical current density with sufficient current carrying capacity, even when the switch is installed in a space where there are large magnetic fields.

Accordingly, amended claim 1 recites a novel and advantageous device which is not shown or suggested in the art of record. Therefore, this claim is patentable and should be allowed.

The other art cited has been considered and is not deemed pertinent.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Prompt and favorable action is requested.

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Respectfully submitted,

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